

(3)

wherein R^2 individually represents a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, or a linear or branched alkyl group having 1-4 carbon atoms, and provided that at least one of R^2 groups is the alicyclic hydrocarbon group or a derivative thereof, or any two of R^2 groups form, in combination and together with the carbon atom to which the two R^2 groups bond, a divalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, with the remaining R^2 being a linear or branched alkyl group having 1-4 carbon atoms, a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms, or a derivative thereof.

10

2. A radiation-sensitive resin composition comprising an acid-labile group-containing resin which is insoluble or scarcely soluble in alkali, but becomes alkali soluble by the action of an acid, and a photoacid generator, wherein the acid-labile group-containing resin is the acrylic copolymer according to claim 1.

15

3. The radiation-sensitive resin composition according to claim 2, wherein at least one R^1 group in the formula (2) is a hydroxyl group

4. The radiation-sensitive resin composition according to claim 2, wherein the group $-\text{C}(\text{R}^2)_3$ in the formula (3) is at least one group selected from the group consisting

20

of a 1-methyl-1-cyclopentyl group, a 1-ethyl-1-cyclopentyl group, a
1-methyl-1-cyclohexyl group, and a 1-ethyl-1-cyclohexyl group.

5. The radiation-sensitive resin composition according to claim 2, wherein the
5 acid-labile group-containing resin comprises the recurring unit (1), recurring unit (2),
and recurring unit (3) at a molar ratio (mol% of the total recurring units) of 20-70: 5-40:
20-50.

6. The radiation-sensitive resin composition according to claim 2, wherein the
10 photoacid generator comprises at least one compound selected from the group consisting
of a triphenylsulfonium salt compound, a 4-cyclohexylphenyldiphenylsulfonium salt
compound, a 4-t-butylphenyldiphenylsulfonium salt compound, and a
tri(4-t-butylphenyl)sulfonium salt compound.

15 7. The radiation-sensitive resin composition according to claim 2, wherein the
amount of photoacid generator is 0.1-7 parts by weight for 100 parts by weight of the
acrylic copolymer.

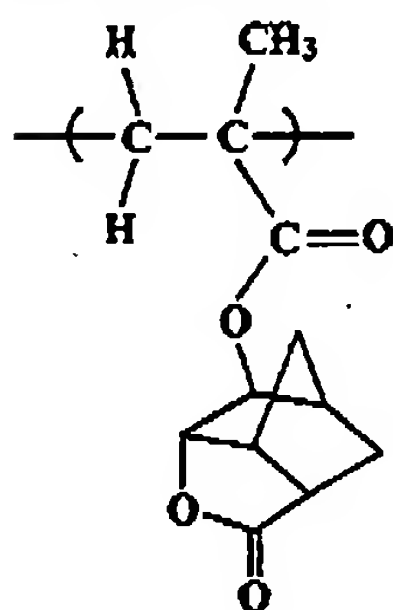
8. The radiation-sensitive resin composition according to claim 2, further
20 comprising an acid diffusion controller, wherein the acid diffusion controller is a
nitrogen-containing organic compound.

9. The radiation-sensitive resin composition according to claim 2, wherein after
post exposure baking the size of contact hole patterns is reduced at an excellent precision
25 by post development baking.

10. (Added) The radiation-sensitive resin composition according to claim 2,
wherein any two of R^2 groups in the formula (3) of the acid-labile group-containing
resin form, in combination and together with the carbon atom to which these R^2 groups
bond, a divalent monocyclic alicyclic hydrocarbon group having 4-20 carbon atoms or a
5 derivative thereof, with the remaining R^2 group being a linear or branched alkyl group
having 1-4 carbon atoms, a monovalent alicyclic hydrocarbon group having 4-20 carbon
atoms, or a derivative thereof.

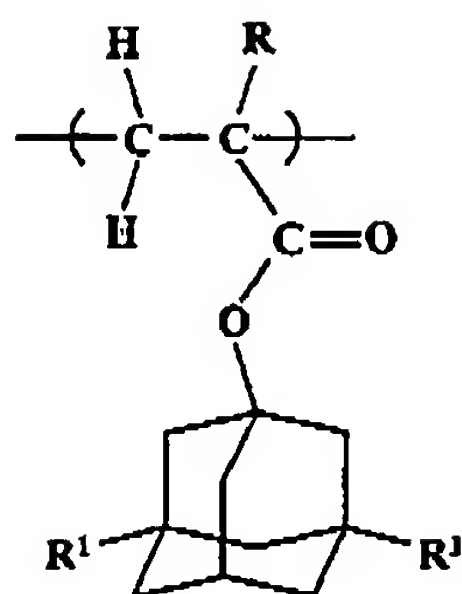
11. (Added) The radiation-sensitive resin composition according to claim 10,
10 wherein the divalent monocyclic alicyclic hydrocarbon group having 4-20 carbon atoms
is a cycloheptyl group or a cyclohexyl group.

12. (Added) An acrylic copolymer consisting essentially of:
a recurring unit of the following formula (1),



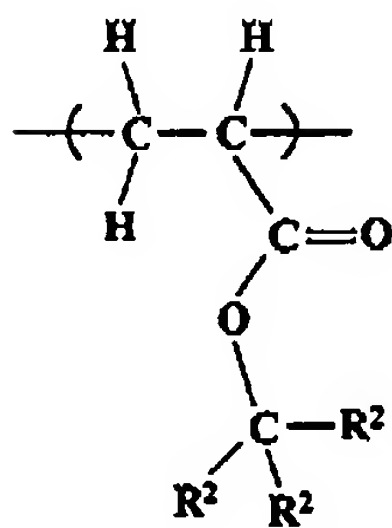
(1)

15 a recurring unit of the following formula (2),



(2)

- wherein R represents a hydrogen atom or a methyl group; R¹ individually represents a hydrogen atom, hydroxyl group, or -COOR³ group, wherein R³ is a hydrogen atom, a linear or branched alkyl group having 1-4 carbon atoms, or an alicyclic alkyl group
- 5 having 3-20 carbon atoms, provided that at least one of R¹ groups is not a hydrogen atom, and
- a recurring unit of the following formula (3),



(3)

- wherein any two of R² groups form, in combination and together with the carbon atom to
- 10 which the two R² groups bond, a divalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, with the remaining R² being a linear or branched alkyl group having 1-4 carbon atoms, a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms, or a derivative thereof.